

Mindlin's Half-Space Green's Function and Its Various Extensions, A Brief Review

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In this talk, I will first briefly review the classic Mindlin solution for the elastic isotropic half space. Direct and indirect applications of this solution to various civil engineering areas will be then discussed. Finally I will present various extensions of this special fundamental solution. These will include the corresponding dislocation solution in material and Earth science, bimaterial isotropic Green's functions, Green's functions in anisotropic infinite, half, and bimaterial spaces, Green's functions in multilayered half spaces and in multilayered functionally graded material spaces. Besides their various applications to different conventional engineering fields, novel applications of the Mindlin related solutions to the current nanosciences and nanoengineering problems will be also presented.

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